

## Search Plan and Results

### Question

[What is the relationship between breakfast and body weight? \(DGAC 2010\)](#)

### Date Searched

12/2/2009 and 1/13/2010

### Inclusion Criteria

- January 2000 to present
- Systematic reviews and meta-analysis, randomized controlled trials or clinical controlled studies, large non-randomized observational studies, cohort, case-control studies
- Human subjects
- The sample size must equal 10 adults for each study group. For example, this would include 10 patients in the intervention group and 10 patients in the control or comparison group
- Less than 20%; preference for smaller dropout rates
- English language
- International
- Ages: Children: under age 18 years, Adults: 19 years and older
- Populations: Healthy and those with elevated chronic disease risk;

### Exclusion Criteria

- Medical treatment/therapy
- Cross-sectional studies
- Narrative reviews, cross-sectional studies
- Diseased subjects (already diagnosed with disease related to study purpose)
- Hospitalized patients
- Malnourished/third-world populations or disease incidence not relative to US population (e.g., malaria)
- Animal studies
- In vitro studies
- Articles not peer reviewed (websites, magazine articles, Federal reports, etc.).

### Search Terms: Search Vocabulary

Breakfast AND ("body weight"[mh] OR adiposity[mh] OR "Body Mass Index"[majr] OR "Overweight"[majr] OR "Obesity"[majr] OR "Weight Gain"[mh] OR "Waist-Hip Ratio"[Mesh]) NOT (skip\* OR consumption OR (Editorial[ptyp] OR Letter[ptyp]) OR

review[ptyp]))

Breakfast AND (skip\* OR consumption) AND ("body weight"[mh] OR adiposity[mh]  
OR "Body Mass Index"[majr] OR "Overweight"[majr] OR "Obesity"[majr] OR "Weight  
Gain"[mh])

## Electronic Databases

Pubmed

**Total hits from all electronic database searches: 521**

**Total articles identified to review from electronic databases: 115**

Articles Identified Via Handsearch or Other Means

### **Articles included via hand search: 2**

Ask AS, Hernes S, Aarek I, Johannessen G, Haugen M. [Changes in dietary pattern in 15 year old adolescents following a 4 month dietary intervention with school breakfast--a pilot study.](#) *Nutr J.* 2006 Dec 7; 5:33. PMID: 17150115.

Crossman A, Anne Sullivan D, Benin M. [The family environment and American adolescents' risk of obesity as young adults.](#) *Soc Sci Med.* 2006 Nov;63(9): 2, 255-2, 267. Epub 2006 Jul 7. PMID: 16828216.

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## Summary of Articles Identified to Review

**Number of Primary Articles Identified: 18**

**Number of Review Articles Identified: 0**

**Total Number of Articles Identified: 18**

**Number of Articles Reviewed but Excluded: 100**

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## List of Articles Included for Evidence Analysis

### **Included Articles (18)**

#### **What is the relationship between breakfast and adiposity in children?**

Affenito SG, Thompson DR, Barton BA, Franko DL, Daniels SR, Obarzanek E, Schreiber

GB, Striegel-Moore RH. [Breakfast consumption by African-American and white adolescent girls correlates positively with calcium and fiber intake and negatively with body mass index.](#) *J Am Diet Assoc.* 2005 Jun; 105 (6): 938-945.

Albertson AM, Franko DL, Thompson D, Eldridge AL, Holschuh N, Affenito SG, Bauserman R, Striegel-Moore RH. [Longitudinal patterns of breakfast eating in black and white adolescent girls.](#) *Obesity* (Silver Spring). 2007 Sep; 15 (9): 2, 282-2, 292.

Albertson AM, Affenito SG, Bauserman R, Holschuh NM, Eldridge AL, Barton BA. [The relationship of ready-to-eat cereal consumption to nutrient intake, blood lipids and body mass index of children as they age through adolescence.](#) *J Am Diet Assoc.* 2009 Sep; 109 (9): 1, 557-1, 565.

Ask AS, Hernes S, Aarek I, Johannessen G, Haugen M. [Changes in dietary pattern in 15-year old adolescents following a four-month dietary intervention with school breakfast: A pilot study.](#) *Nutr J.* 2006 Dec 7; 5: 33.

Barton BA, Eldridge AL, Thompson D, Affenito SG, Striegel-Moore RH, Franko DL, Albertson AM, Crockett SJ. [The relationship of breakfast and cereal consumption to nutrient intake and body mass index: The National Heart, Lung, and Blood Institute Growth and Health Study.](#) *J Am Diet Assoc.* 2005 Sep; 105 (9): 1, 383-1, 389.

Berkey CS, Rockett HR, Gillman MW, Field AE, Colditz GA. [Longitudinal study of skipping breakfast and weight change in adolescents.](#) *Int J Obes Relat Metab Disord.* 2003 Oct; 27 (10): 1, 258-1, 266

Crossman A, Anne Sullivan D, Benin M. [The family environment and American adolescents' risk of obesity as young adults.](#) *Soc Sci Med.* 2006; 63 (9): 2, 255-2, 267.

Elgar FJ, Roberts C, Moore L, Tudor-Smith C. [Sedentary behavior, physical activity and weight problems in adolescents in Wales.](#) *Public Health.* 2005 Jun; 119 (6): 518-524.

Haines J, Neumark-Sztainer D, Wall M, Story M. [Personal, behavioral, and environmental risk and protective factors for adolescent overweight.](#) *Obesity* (Silver Spring). 2007 Nov; 15 (11): 2, 748-2, 760.

Merten MJ, Williams AL, Shriver LH. [Breakfast consumption in adolescence and young adulthood: Parental presence, community context and obesity.](#) *J Am Diet Assoc.* 2009 Aug; 109 (8): 1, 384-1, 391.

Neumark-Sztainer D, Wall M, Haines J, Story M, Eisenberg ME. [Why does dieting predict weight gain in adolescents? Findings from project EAT-II: A five-year longitudinal study.](#) *J Am Diet Assoc.* 2007 Mar; 107 (3): 448-455.

Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. [Fast food consumption and breakfast skipping: Predictors of weight gain from adolescence to adulthood in a nationally representative sample.](#) *J Adolesc Health.* 2006 Dec; 39 (6): 842-849. Epub 2006 Sep 27.

Rosado JL, del R Arellano M, Montemayor K, García OP, Caamaño Mdel C. [An increase of cereal intake as an approach to weight reduction in children is effective only when accompanied by nutrition education: A randomized controlled trial.](#) *Nutr J.* 2008 Sep 10; 7:28.

Timlin MT, Pereira MA, Story M, Neumark-Sztainer D. [Breakfast eating and weight change](#)

[in a five-year prospective analysis of adolescents: Project EAT \(Eating Among Teens\).](#) *Pediatrics*. 2008 Mar; 121 (3): e638-e645

Wengreen HJ, Moncur C. [Change in diet, physical activity and body weight among young-adults during the transition from high school to college.](#) *Nutr J*. 2009; 8: 32.

### **What is the relationship between breakfast and body weight in adults?**

Crossman A, Anne Sullivan D, Benin M. [The family environment and American adolescents' risk of obesity as young adults.](#) *Soc Sci Med*. 2006; 63 (9): 2, 255-2, 267.

Merten MJ, Williams AL, Shriver LH. [Breakfast consumption in adolescence and young adulthood: Parental presence, community context and obesity.](#) *J Am Diet Assoc*. 2009 Aug; 109 (8): 1, 384-1, 391.

Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. [Fast food consumption and breakfast skipping: Predictors of weight gain from adolescence to adulthood in a nationally representative sample.](#) *J Adolesc Health*. 2006 Dec; 39 (6): 842-849. Epub 2006 Sep 27.

Nooyens AC, Visscher TL, Schuit AJ, van Rossum CT, Verschuren WM, van Mechelen W, Seidell JC. [Effects of retirement on lifestyle in relation to changes in weight and waist circumference in Dutch men: A prospective study.](#) *Public Health Nutr*. 2005 Dec; 8 (8): 1, 266-1, 274.

Purslow LR, Sandhu MS, Forouhi N, Young EH, Luben RN, Welch AA, Khaw KT, Bingham SA, Wareham NJ. [Energy intake at breakfast and weight change: Prospective study of 6, 764 middle-aged men and women.](#) *Am J Epidemiol*. 2008 Jan 15; 167 (2): 188-192. Epub 2007 Dec 12.

van der Heijden AA, Hu FB, Rimm EB, van Dam RM. [A prospective study of breakfast consumption and weight gain among US men.](#) *Obesity* (Silver Spring). 2007 Oct; 15 (10): 2, 463-2, 469.

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#### List of Excluded Articles with Reason

Article (A-K)	Reason for Exclusion
Albertson AM, Anderson GH, Crockett SJ, Goebel MT. <a href="#">Ready-to-eat cereal consumption: Its relationship with BMI and nutrient intake of children aged four to 12 years.</a> <i>J Am Diet</i>	Study design is cross-sectional.
Alexander KE, Ventura EE, Spruijt-Metz D, Weigensberg MJ, Goran MI, Davis JN. <a href="#">Association of breakfast skipping with visceral fat and insulin indices in overweight Latino youth.</a> <i>Obesity</i> (Silver Spring). 2009 Aug;17 (8): 1, 528-1, 533. Epub 2009 May 7. PMID: 19424166	Study design is cross-sectional.

<p>Amin TT, Al-Sultan AI, Ali A. Overweight and obesity and their relation to dietary habits and socio-demographic characteristics among male primary school children in Al-Hassa, Kingdom of Saudi Arabia. <i>Eur J Nutr.</i> 2008 Sep; 47 (6): 310-318. Epub 2008 Aug 1. PMID: 18677544</p>	<p>Study design is cross-sectional.</p>
<p>Amosa T, Rush E, Plank L. <a href="#">Frequency of eating occasions reported by young New Zealand Polynesian and European women.</a> <i>Pac Health Dialog.</i> 2001 Mar; 8 (1): 59-65. PMID: 12017838</p>	<p>Study design is cross-sectional.</p>
<p>Ayranci U, Erenoglu N, Son O. Eating habits, lifestyle factors, and body weight status among Turkish private educational institution students. <i>Nutrition.</i> 2009 Nov 13. [Epub ahead of print]</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Bazzano LA, Song Y, Bubes V, Good CK, Manson JE, Liu S. <a href="#">Dietary intake of whole and refined grain breakfast cereals and weight gain in men.</a> <i>Obes Res.</i> 2005 Nov; 13 (11): 1, 952-1, 960. PMID: 16339127</p>	<p>Does not answer question; examined the relationship between cereal intake and weight.</p>
<p>Bertéus Forslund H, Lindroos AK, Sjöström L, Lissner L. Meal patterns and obesity in Swedish women—a simple instrument describing usual meal types, frequency and temporal distribution. <i>Eur J Clin Nutr.</i> 2002 Aug; 56 (8): 740-747.</p>	<p>Study design is cross-sectional.</p>
<p>bin Zaal AA, Musaiger AO, D'Souza R. <a href="#">Dietary habits associated with obesity among adolescents in Dubai, United Arab Emirates.</a> <i>Nutr Hosp.</i> 2009 Jul-Aug; 24 (4): 437-444. PMID: 19721923</p>	<p>Study design is cross-sectional.</p>
<p>Boutelle K, Neumark-Sztainer D, Story M, Resnick M. <a href="#">Weight control behaviors among obese, overweight and non-overweight adolescents.</a> <i>J Pediatr Psychol.</i> 2002 Sep; 27 (6): 531-540. PMID: 12177253</p>	<p>Study design is cross-sectional.</p>
<p>Buyken AE, Trauner K, Günther AL, Kroke A, Remer T. Breakfast glycemic index affects subsequent daily energy intake in free-living healthy children. <i>Am J Clin Nutr.</i> 2007 Oct; 86 (4): 980-987. PMID: 17921374</p>	<p>Does not include weight in analyses.</p>
<p>Carels RA, Young KM, Coit C, Clayton AM, Spencer A, Wagner M. <a href="#">Skipping meals and alcohol consumption. The regulation of energy intake and expenditure among weight loss participants.</a> <i>Appetite.</i> 2008 Nov; 51 (3): 538-545. Epub 2008 Apr 15. PMID: 18511146</p>	<p>Did not answer question; examined breakfast as a tool for active weight loss.</p>

Chitra U, Reddy CR. The role of breakfast in nutrient intake of urban schoolchildren. <i>Public Health Nutr.</i> 2007 Jan; 10 (1): 55-58. PMID: 17212843	Does not answer question; did not examine relationship between breakfast and weight.
Cho S, Dietrich M, Brown CJ, Clark CA, Block G. The effect of breakfast type on total daily energy intake and body mass index: Results from the Third National Health and Nutrition Examination Survey (NHANES III). <i>J Am Coll Nutr.</i> 2003 Aug; 22 (4): 296-302. PMID: 12897044	Study design is cross-sectional.
Clarke PJ, O'Malley PM, Johnston LD, Schulenberg JE, Lantz P. <a href="#">Differential trends in weight-related health behaviors among American young adults by gender, race/ethnicity, and socioeconomic status: 1984-2006.</a> <i>Am J Public Health.</i> 2009 Oct; 99 (10): 1, 893-1, 901. Epub 2009 Aug 20. PMID: 19696395	Does not answer question; did not examine relationship between breakfast and weight.
Colles SL, Dixon JB, O'Brien PE. <a href="#">Night eating syndrome and nocturnal snacking: association with obesity, binge eating and psychological distress.</a> <i>Int J Obes (Lond).</i> 2007 Nov; 31 (11): 1, 722-1, 730. Epub 2007 Jun 19. PMID: 17579633	Does not answer question; examined the effects of nocturnal snacking effects on appetite for breakfast.
Cotton JR, Burley VJ, Weststrate JA, Blundell JE. Dietary fat and appetite: similarities and differences in the satiating effect of meals supplemented with either fat or carbohydrate. <i>J Hum Nutr Diet.</i> 2007 Jun; 20 (3): 186-199. PMID: 17539869	Does not answer question; examined the effects on energy intake and satiety of breakfast test meals with varied macronutrient content.
Crepinsek MK, Singh A, Bernstein LS, McLaughlin JE. <a href="#">Dietary effects of universal-free school breakfast: Findings from the evaluation of the school breakfast program pilot project.</a> <i>J Am Diet Assoc.</i> 2006 Nov; 106 (11): 1, 796-1, 803. PMID: 17081831	Does not include weight in analyses.
Croezen S, Visscher TL, Ter Bogt NC, Veling ML, Haveman-Nies A. <a href="#">Skipping breakfast, alcohol consumption and physical inactivity as risk factors for overweight and obesity in adolescents: Results of the E-MOVO project.</a> <i>Eur J Clin Nutr.</i> 2009 Mar; 63 (3): 405-412. Epub 2007 Nov 28. PMID: 18043703	Study design is cross-sectional.
Davis AM, Boles RE, James RL, Sullivan DK, Donnelly JE, Swirczynski DL, Goetz J. Health behaviors and weight status among urban and rural children. <i>Rural Remote Health.</i> 2008 Apr-Jun; 8 (2): 810. Epub 2008 Apr 15. PMID: 18426334	Does not answer question; did not examine relationship between breakfast and weight urban and rural children.

<p>Davy BM, Dennis EA, Dengo AL, Wilson KL, Davy KP. Water consumption reduces energy intake at a breakfast meal in obese older adults. <i>J Am Diet Assoc.</i> 2008 Jul; 108 (7): 1, 236-1, 239. PMID: 18589036</p>	<p>Does not answer question; examined the effects on satiety of a water pre-load served at a breakfast test meal.</p>
<p>Dialektakou KD, Vranas PB. <a href="#">Breakfast skipping and body mass index among adolescents in Greece: Whether an association exists depends on how breakfast skipping is defined.</a> <i>J Am Diet Assoc.</i> 2008 Sep; 108 (9): 1, 517-1, 525. PMID: 18755326</p>	<p>Study design is cross-sectional.</p>
<p>Doucet E, St-Pierre S, Alm�eras N, Tremblay A. Relation between appetite ratings before and after a standard meal and estimates of daily energy intake in obese and reduced obese individuals. <i>Appetite.</i> 2003 Apr; 40 (2): 137-143. PMID: 12781163</p>	<p>Does not include weight in analyses.</p>
<p>Dove ER, Hodgson JM, Puddey IB, Beilin LJ, Lee YP, Mori TA. <a href="#">Skim milk compared with a fruit drink acutely reduces appetite and energy intake in overweight men and women.</a> <i>Am J Clin Nutr.</i> 2009 Jul; 90 (1): 70-75. Epub 2009 May 27. PMID: 19474132</p>	<p>Does not answer question; examined the effects on satiety of beverages consumed at a breakfast test meal.</p>
<p>Dubois L, Girard M, Potvin Kent M. <a href="#">Breakfast eating and overweight in a pre-school population: Is there a link?</a> <i>Public Health Nutr.</i> 2006 Jun; 9 (4): 436-442. PMID: 16870015</p>	<p>Study design is cross-sectional.</p>
<p>Dubois L, Girard M, Potvin Kent M, Farmer A, Tatone-Tokuda F. <a href="#">Breakfast skipping is associated with differences in meal patterns, macronutrient intakes and overweight among pre-school children.</a> <i>Public Health Nutr.</i> 2009 Jan; 12 (1): 19-28. Epub 2008 Mar 18. PMID: 18346309</p>	<p>Study design is cross-sectional.</p>
<p>Duncan JS, Schofield G, Duncan EK, Rush EC. <a href="#">Risk factors for excess body fatness in New Zealand children.</a> <i>Asia Pac J Clin Nutr.</i> 2008; 17 (1): 138-147. PMID: 18364339</p>	<p>Study design is cross-sectional.</p>
<p>Ells LJ, Hillier FC, Shucksmith J, Crawley H, Harbige L, Shield J, Wiggins A, Summerbell CD. <a href="#">A systematic review of the effect of dietary exposure that could be achieved through normal dietary intake on learning and performance of school-aged children of relevance to UK schools.</a> <i>Br J Nutr.</i> 2008 Nov; 100 (5): 927-936. Epub 2008 Apr 1. Review.</p>	<p>Does not answer question; examined the relationship between breakfast and school performance.</p>

<p>Farghaly NF, Ghazali BM, Al-Wabel HM, Sadek AA, Abbag FI. <a href="#">Life style and nutrition and their impact on health of Saudi school students in Abha, Southwestern region of Saudi Arabia</a>. <i>Saudi Med J</i>. 2007 Mar; 28 (3): 415-421. PMID: 17334472</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Farshchi HR, Taylor MA, Macdonald IA. Deleterious effects of omitting breakfast on insulin sensitivity and fasting lipid profiles in healthy lean women. <i>Am J Clin Nutr</i>. 2005 Feb; 81 (2): 388-396. PMID: 15699226</p>	<p>Did not answer question; examined breakfast as a tool for active weight loss.</p>
<p>Fiore H, Travis S, Whalen A, Auinger P, Ryan S. <a href="#">Potentially protective factors associated with healthful body mass index in adolescents with obese and non-obese parents: A secondary data analysis of the third national health and nutrition examination survey, 1988-1994</a>. <i>J Am Diet Assoc</i>. 2006 Jan; 106 (1): 55-64; quiz 76-9. PMID: 16390667</p>	<p>Study design is cross-sectional.</p>
<p>Franko DL, Thompson D, Bauserman R, Affenito SG, Striegel-Moore RH; National Heart, Lung, and Blood Institute Growth and Health Study (NGHS). What's love got to do with it? Family cohesion and healthy eating behaviors in adolescent girls. <i>Int J Eat Disord</i>. 2008 May; 41 (4): 360-367. PMID: 18318040</p>	<p>Does not answer question; examined the relationship between breakfast and family cohesion.</p>
<p>Gibson S. <a href="#">Micronutrient intakes, micronutrient status and lipid profiles among young people consuming different amounts of breakfast cereals: Further analysis of data from the National Diet and Nutrition Survey of Young People aged four to 18 years</a>. <i>Public Health Nutr</i>. 2003 Dec; 6 (8): 815-820. PMID: 14641953</p>	<p>Did not include weight in analyses.</p>
<p>Gleason PM, Dodd AH. <a href="#">School breakfast program but not school lunch program participation is associated with lower body mass index</a>. <i>J Am Diet Assoc</i>. 2009 Feb; 109 (2 Suppl): S118-S128. PMID: 19166666</p>	<p>Study design is cross-sectional.</p>
<p>Gluck ME, Geliebter A, Satov T. <a href="#">Night eating syndrome is associated with depression, low self-esteem, reduced daytime hunger and less weight loss in obese outpatients</a>. <i>Obes Res</i>. 2001 Apr; 9 (4): 264-267. PMID: 11331430</p>	<p>Does not answer question; examined the relationship between night eating and weight.</p>
<p>Greenwood JL, Stanford JB. Preventing or improving obesity by addressing specific eating patterns. <i>J Am Board Fam Med</i>. 2008 Mar-Apr; 21 (2): 135-140. Review. PMID: 18343861</p>	<p>Study design is a narrative review.</p>

<p>Grøholt EK, Stigum H, Nordhagen R. <a href="#">Overweight and obesity among adolescents in Norway: Cultural and socio-economic differences</a>. <i>J Public Health (Oxf)</i>. 2008 Sep;30 (3): 258-265. Epub 2008 May 8. PMID: 18467431</p>	<p>Study design is cross-sectional.</p>
<p>Grujic V, Cvejic MM, Nikolic EA, Dragic N, Jovanovic VM, Kvirgic S, Travar S. Association between obesity and socioeconomic factors and lifestyle. <i>Vojnosanit Pregl</i>. 2009 Sep; 66 (9): 705-710. PMID: 19877548</p>	<p>Study design is cross-sectional.</p>
<p>Harding S, Teyhan A, Maynard MJ, Cruickshank JK. <a href="#">Ethnic differences in overweight and obesity in early adolescence in the MRC DASH study: The role of adolescent and parental lifestyle</a>. <i>Int J Epidemiol</i>. 2008 Feb; 37 (1): 162-172. Epub 2008 Jan 19. PMID: 18204089</p>	<p>Study design is cross-sectional.</p>
<p>Hirschler V, Buzzano K, Erviti A, Ismael N, Silva S, Dalamon R. <a href="#">Overweight and lifestyle behaviors of low socioeconomic elementary school children in Buenos Aires</a>. <i>BMC Pediatr</i>. 2009 Feb 24; 9: 17. PMID: 19239682</p>	<p>Study design is cross-sectional.</p>
<p>Kant AK, Andon MB, Angelopoulos TJ, Rippe JM. Association of breakfast energy density with diet quality and body mass index in American adults: National Health and Nutrition Examination Surveys, 1999-2004. <i>Am J Clin Nutr</i>. 2008 Nov; 88 (5): 1, 396-1, 404. PMID: 18996877</p>	<p>Study design is cross-sectional.</p>
<p>Kant AK, Graubard BI, Atchison EA. <a href="#">Intakes of plain water, moisture in foods and beverages, and total water in the adult US population-nutritional, meal pattern, and body weight correlates: National Health and Nutrition Examination Surveys 1999-2006</a>. <i>Am J Clin Nutr</i>. 2009 Sep; 90 (3): 655-663. Epub 2009 Jul 29. PMID: 19640962</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Kant AK, Graubard BI. Secular trends in patterns of self-reported food consumption of adult Americans: NHANES 1971-1975 to NHANES 1999-2002. <i>Am J Clin Nutr</i>. 2006 Nov; 84 (5): 1, 215-1, 223. PMID: 17093177</p>	<p>Study design is cross-sectional.</p>
<p>Kosti RI, Panagiotakos DB, Mihos CC, Alevizos A, Zampelas A, Mariolis A, Tountas Y. Dietary habits, physical activity and prevalence of overweight/obesity among adolescents in Greece: The Vyrnas study. <i>Med Sci Monit</i>. 2007 Oct; 13 (10): CR437-44. PMID: 17901850</p>	<p>Study design is cross-sectional.</p>

<p>Kosti RI, Panagiotakos DB, Zampelas A, Mihas C, Alevizos A, Leonard C, Tountas Y, Mariolis A. <a href="#">The association between consumption of breakfast cereals and BMI in schoolchildren aged 12-17 years: The VYRONAS study</a>. <i>Public Health Nutr</i>. 2008 Oct; 11 (10): 1, 015-1, 021. Epub 2007 Dec 20. PMID: 18093352</p>	<p>Study design is cross-sectional.</p>
<p>Kovářová M, Vignerová J, Bláha P, Osancová K. <a href="#">Bodily characteristics and lifestyle of Czech children aged 7.00 to 10.99 years, incidence of childhood obesity</a>. <i>Cent Eur J Public Health</i>. 2002 Dec; 10 (4): 169-173. PMID: 12528392</p>	<p>Study design is cross-sectional.</p>

Article (L-S)	Reason for Exclusion
<p>Lazzeri G, Giallombardo D, Guidoni C, Zani A, Casorelli A, Grasso A, Pozzi T, Rossi S, Giacchi M. <a href="#">Nutritional surveillance in Tuscany: Eating habits at breakfast, mid-morning and afternoon snacks among eight to nine year-old children</a>. <i>J Prev Med Hyg</i>. 2006 Sep; 47 (3): 91-99. PMID: 17217185</p>	<p>Study design is cross-sectional.</p>
<p>Leahy KE, Birch LL, Rolls BJ. <a href="#">Reducing the energy density of multiple meals decreases the energy intake of preschool-age children</a>. <i>Am J Clin Nutr</i>. 2008 Dec; 88 (6): 1, 459-1, 468. PMID: 19064504</p>	<p>Does not answer question; examined the effects of decreasing energy density on energy intake.</p>
<p>Lioret S, Touvier M, Lafay L, Volatier JL, Maire B. <a href="#">Are eating occasions and their energy content related to child overweight and socioeconomic status?</a> <i>Obesity</i> (Silver Spring). 2008 Nov; 16 (11): 2, 518-2, 523. Epub 2008 Sep 4. PMID: 18772863</p>	<p>Study design is cross-sectional.</p>
<p>Lomenick JP, Clasey JL, Anderson JW. <a href="#">Meal-related changes in ghrelin, peptide YY and appetite in normal weight and overweight children</a>. <i>Obesity</i> (Silver Spring). 2008 Mar; 16 (3): 547-552. Epub 2008 Jan 24. PMID: 18239577</p>	<p>Does not answer question; examined the effects of a breakfast test meal on ghrelin and peptide YY.</p>
<p>Ma Y, Bertone ER, Stanek EJ 3rd, Reed GW, Hebert JR, Cohen NL, Merriam PA, Ockene IS. <a href="#">Association between eating patterns and obesity in a free-living US adult population</a>. <i>Am J Epidemiol</i>. 2003 Jul 1; 158 (1): 85-92. PMID: 12835290</p>	<p>Study design is cross-sectional.</p>

<p>Maddah M, Rashidi A, Mohammadpour B, Vafa R, Karandish M. <a href="#">In-school snacking, breakfast consumption, and sleeping patterns of normal and overweight Iranian high school girls: A study in urban and rural areas in Guilan, Iran.</a> <i>J Nutr Educ Behav.</i> 2009 Jan-Feb; 41 (1): 27-31. PMID: 19161917</p>	<p>Study population not from a developed country as defined by the Human Development Index (2010).</p>
<p>Maddah M. <a href="#">Risk factors for overweight in urban and rural school girls in Iran: Skipping breakfast and early menarche.</a> <i>Int J Cardiol.</i> 2009 Aug 14; 136 (2): 235-238. Epub 2008 Jul 18. PMID: 18639942</p>	<p>Study population not from a developed country as defined by the Human Development Index (2010).</p>
<p>Magnusson MB, Hulthén L, Kjellgren KI. <a href="#">Obesity, dietary pattern and physical activity among children in a suburb with a high proportion of immigrants.</a> <i>J Hum Nutr Diet.</i> 2005 Jun; 18 (3): 187-194. PMID: 15882381</p>	<p>Study design is cross-sectional.</p>
<p>Malinauskas BM, Raedeke TD, Aeby VG, Smith JL, Dallas MB. <a href="#">Dieting practices, weight perceptions, and body composition: A comparison of normal weight, overweight, and obese college females.</a> <i>Nutr J.</i> 2006 Mar 31; 5: 11. PMID: 16579846</p>	<p>Does not include breakfast intake in analyses.</p>
<p>Marín-Guerrero AC, Gutiérrez-Fisac JL, Guallar-Castillón P, Banegas JR, Rodríguez-Artalejo F. <a href="#">Eating behaviours and obesity in the adult population of Spain.</a> <i>Br J Nutr.</i> 2008 Nov; 100 (5): 1, 142-1, 148. Epub 2008 Apr 1. PMID: 18377684</p>	<p>Study design is cross-sectional.</p>
<p>Masheb RM, Grilo CM. <a href="#">Eating patterns and breakfast consumption in obese patients with binge eating disorder.</a> <i>Behav Res Ther.</i> 2006 Nov; 44 (11): 1, 545-1, 553. Epub 2005 Dec 22. PMID: 16376851</p>	<p>Study design is cross-sectional.</p>
<p>Mattes RD. <a href="#">Ready-to-eat cereal used as a meal replacement promotes weight loss in humans.</a> <i>J Am Coll Nutr.</i> 2002 Dec; 21 (6): 570-577. PMID: 12480804</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Mota J, Fidalgo F, Silva R, Ribeiro JC, Santos R, Carvalho J, Santos MP. <a href="#">Relationships between physical activity, obesity and meal frequency in adolescents.</a> <i>Ann Hum Biol.</i> 2008 Jan-Feb; 35 (1): 1-10. PMID: 18274921</p>	<p>Study design is cross-sectional.</p>

<p>Murata M. <a href="#">Secular trends in growth and changes in eating patterns of Japanese children.</a> <i>Am J Clin Nutr.</i> 2000 Nov; 72 (5 Suppl): 1379S-1383S. Review. PMID: 11063481</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Nicklas TA, Morales M, Linares A, Yang SJ, Baranowski T, De Moor C, Berenson G. <a href="#">Children's meal patterns have changed over a 21-year period: The Bogalusa Heart Study.</a> <i>J Am Diet Assoc.</i> 2004 May; 104 (5): 753-761. PMID: 15127060</p>	<p>Study design is cross-sectional.</p>
<p>O'Dea JA, Abraham S. <a href="#">Knowledge, beliefs, attitudes, and behaviors related to weight control, eating disorders, and body image in Australian trainee home economics and physical education teachers.</a> <i>J Nutr Educ.</i> 2001 Nov-Dec; 33 (6): 332-340. PMID: 12031171</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>O'Dea JA, Caputi P. <a href="#">Association between socioeconomic status, weight, age and gender, and the body image and weight control practices of six- to 19-year-old children and adolescents.</a> <i>Health Educ Res.</i> 2001 Oct; 16 (5): 521-532. PMID: 11675800</p>	<p>Study design is cross-sectional.</p>
<p>Ortega RM, Aparicio A, Rodríguez-Rodríguez E, Bermejo LM, Perea JM, López-Sobaler AM, Ruiz-Roso B, Andrés P. <a href="#">Preliminary data about the influence of vitamin D status on the loss of body fat in young overweight/obese women following two types of hypocaloric diet.</a> <i>Br J Nutr.</i> 2008 Aug; 100 (2): 269-272. PMID: 18279549</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Osaka R, Nanakorn S, Sanseeha L, Nagahiro C, Kodama N. <a href="#">Healthy dietary habits, body mass index, and predictors among nursing students, northeast Thailand.</a> <i>Southeast Asian J Trop Med Public Health.</i> 1999 Mar; 30 (1): 115-121. PMID: 10695799</p>	<p>Study population not from a developed country as defined by the Human Development Index (2010).</p>
<p>Pal S, Lim S, Egger G. <a href="#">The effect of a low glycemic index breakfast on blood glucose, insulin, lipid profiles, blood pressure, body weight, body composition and satiety in obese and overweight individuals: A pilot study.</a> <i>J Am Coll Nutr.</i> 2008 Jun; 27 (3): 387-393. PMID: 18838526</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Panagiotakos DB, Antonogeorgos G, Papadimitriou A, Anthracopoulos MB, Papadopoulos M, Konstantinidou M, Fretzayas A, Priftis KN. <a href="#">Breakfast cereal is associated with a lower prevalence of obesity among 10 to 12-year-old children: The PANACEA study.</a> <i>Nutr Metab Cardiovasc Dis.</i> 2008 Nov; 18 (9): 606-612. Epub 2008 May 23. PMID: 18502106</p>	<p>Study design is cross-sectional.</p>

<p>Pawlow LA, O'Neil PM, Malcolm RJ. <a href="#">Night eating syndrome: effects of brief relaxation training on stress, mood, hunger, and eating patterns.</a> <i>Int J Obes Relat Metab Disord.</i> 2003 Aug; 27 (8): 970-978. PMID: 12861239</p>	<p>Does not answer question; examined the effects of night eating on breakfast intake.</p>
<p>Pearson N, Biddle SJ, Gorely T. <a href="#">Family correlates of breakfast consumption among children and adolescents. A systematic review.</a> <i>Appetite.</i> 2009 Feb; 52 (1): 1-7. Epub 2008 Aug 22. Review. PMID: 18789364</p>	<p>Does not answer question; examined family correlates of breakfast intake.</p>
<p>Perez-Martinez P, Ordovas JM, Garcia-Rios A, Delgado-Lista J, Delgado-Casado N, Cruz-Teno C, Camargo A, Yubero-Serrano EM, Rodriguez F, Perez-Jimenez F, Lopez-Miranda J. <a href="#">Consumption of diets with different type of fat influences triacylglycerols-rich lipoproteins particle number and size during the postprandial state.</a> <i>Nutr Metab Cardiovasc Dis.</i> 2009 Oct 8. [Epub ahead of print]</p>	<p>Does not answer question; examined the relationship between breakfast and blood lipids.</p>
<p>Prochnik Estima Cde C, da Costa RS, Sichieri R, Pereira RA, da Veiga GV. <a href="#">Meal consumption patterns and anthropometric measurements in adolescents from a low socioeconomic neighborhood in the metropolitan area of Rio de Janeiro, Brazil.</a> <i>Appetite.</i> 2009 Jun; 52 (3): 735-739. Epub 2009 Apr 5. PMID: 19501773</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Rampersaud GC, Pereira MA, Girard BL, Adams J, Metz J. <a href="#">Breakfast habits, nutritional status, body weight and academic performance in children and adolescents.</a> <i>J Am Diet Assoc.</i> 2005 May; 105 (5): 743-760; quiz 761-2. Review. PMID: 15883552</p>	<p>Study design is a narrative review.</p>
<p>Raynor HA, Jeffery RW, Ruggiero AM, Clark JM, Delahanty LM; Look AHEAD (Action for Health in Diabetes) Research Group. <a href="#">Weight loss strategies associated with BMI in overweight adults with type 2 diabetes at entry into the Look AHEAD (Action for Health in Diabetes) trial.</a> <i>Diabetes Care.</i> 2008 Jul; 31 (7): 1, 299-1, 304. Epub 2008 Mar 28. PMID: 18375417</p>	<p>Study design is cross-sectional.</p>
<p>Reddan J, Wahlstrom K, Reicks M. <a href="#">Children's perceived benefits and barriers in relation to eating breakfast in schools with or without Universal School Breakfast.</a> <i>J Nutr Educ Behav.</i> 2002 Jan-Feb; 34 (1): 47-52. PMID: 11917671</p>	<p>Does not answer question; examined the barriers and benefits of implementing universal school breakfast.</p>
<p>Rodríguez-Rodríguez E, Aparicio A, Bermejo LM, López-Sobaler AM, Ortega RM. <a href="#">Changes in the sensation of hunger and well-being before and after meals in overweight/obese women following two types of hypoenergetic diet.</a> <i>Public Health Nutr.</i> 2009 Jan; 12 (1):</p>	<p>Does not answer question; did not examine relationship between breakfast and</p>

44-50. Epub 2008 Mar 7. PMID: 18325135	weight.
Rodríguez-Rodríguez E, López-Sobaler AM, Navarro AR, Bermejo LM, Ortega RM, Andrés P. <a href="#">Vitamin B6 status improves in overweight/obese women following a hypocaloric diet rich in breakfast cereals, and may help in maintaining fat-free mass.</a> <i>Int J Obes</i> (Lond). 2008 Oct; 32(10): 1, 552-1, 558. Epub 2008 Aug 5. PMID: 18679411	Does not answer question; did not examine relationship between breakfast and weight.
Roseman MG, Yeung WK, Nickelsen J. <a href="#">Examination of weight status and dietary behaviors of middle school students in Kentucky.</a> <i>J Am Diet Assoc.</i> 2007 Jul; 107 (7): 1, 139-1, 145. PMID: 17604742	Study design is cross-sectional.
Rush E, Paterson J, Obolonkin V. <a href="#">Food frequency information, relationships to body composition and apparent growth in four-year-old children in the Pacific Island Family Study.</a> <i>N Z Med J.</i> 2008 Sep 5; 121 (1, 281): 63-71. PMID: 18797485	Does not answer question; did not examine relationship between breakfast and weight.
Samuelson G. <a href="#">Dietary habits and nutritional status in adolescents over Europe. An overview of current studies in the Nordic countries.</a> <i>Eur J Clin Nutr.</i> 2000 Mar; 54 Suppl 1:S21-S28. Review. PMID: 10805034	Did not include weight in analyses.
Scazzina F, Del Rio D, Benini L, Melegari C, Pellegrini N, Marcazzan E, Brighenti F. <a href="#">The effect of breakfasts varying in glycemic index and glycemic load on dietary induced thermogenesis and respiratory quotient.</a> <i>Nutr Metab Cardiovasc Dis.</i> 2009 Oct 14. [Epub ahead of print]	Does not answer question; examined the effect of breakfast intake on glycemic index and load.
Scully M, Dixon H, Wakefield M. <a href="#">Association between commercial television exposure and fast-food consumption among adults.</a> <i>Public Health Nutr.</i> 2009 Jan; 12 (1): 105-110. Epub 2008 Mar 14. PMID: 18339226	Does not answer question; did not examine relationship between breakfast and weight.
Shi Z, Lien N, Nirmal Kumar B, Holmboe-Ottesen G. <a href="#">Perceptions of weight and associated factors of adolescents in Jiangsu Province, China.</a> <i>Public Health Nutr.</i> 2007 Mar; 10 (3): 298-305. PMID: 17288628	Study population not from a developed country as defined by the Human Development Index (2010).
Song WO, Chun OK, Obayashi S, Cho S, Chung CE. <a href="#">Is consumption of breakfast associated with body mass index in US adults?</a> <i>J Am Diet Assoc.</i> 2005 Sep; 105 (9): 1, 373-1, 382. PMID: 16129078	Study design is cross-sectional.

Stang J, Kong A, Story M, Eisenberg ME, Neumark-Sztainer D. <a href="#">Food and weight-related patterns and behaviors of Hmong adolescents</a> . <i>J Am Diet Assoc</i> . 2007 Jun; 107 (6): 936-941. PMID: 17524713	Study population not from a developed country as defined by the Human Development Index (2010).
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Article (T-Z)	Reason for Exclusion
Timlin MT, Pereira MA. <a href="#">Breakfast frequency and quality in the etiology of adult obesity and chronic diseases</a> . <i>Nutr Rev</i> . 2007 Jun; 65 (6 Pt 1): 268-281. Review. PMID: 17605303	Study design is a narrative review.
Torres MD, Carmona I, Campillo C, Pérez G, Campillo JE. <a href="#">Breakfast, plasma glucose and beta-hydroxybutyrate, body mass index and academic performance in children from Extremadura, Spain</a> . <i>Nutr Hosp</i> . 2007 Jul-Aug; 22 (4): 487-490. PMID: 17650890	Study design is cross-sectional.
Turkkahraman D, Bircan I, Tosun O, Saka O. <a href="#">Prevalence and risk factors of obesity in school children in Antalya, Turkey</a> . <i>Saudi Med J</i> . 2006 Jul; 27 (7): 1, 028-1, 033. PMID: 16830025	Study design is cross-sectional.
Tuyet Mai T, Kim Hung N, Kawakami M, Nguyen VC. <a href="#">Macronutrient intake and nutritional status of primary school-aged girls in rural and urban areas of South Vietnam</a> . <i>J Nutr Sci Vitaminol (Tokyo)</i> . 2003 Feb; 49 (1): 13-20. PMID: 12882391	Study population not from a developed country as defined by the Human Development Index (2010).
Utter J, Scragg R, Mhurchu CN, Schaaf D. <a href="#">At-home breakfast consumption among New Zealand children: associations with body mass index and related nutrition behaviors</a> . <i>J Am Diet Assoc</i> . 2007 Apr; 107 (4): 570-576. PMID: 17383261	Study design is cross-sectional.
van der Horst K, Oenema A, van de Looij-Jansen P, Brug J. <a href="#">The ENDORSE study: Research into environmental determinants of obesity related behaviors in Rotterdam schoolchildren</a> . <i>BMC Public Health</i> . 2008 Apr 28; 8: 142. PMID: 18442370	Study reports design and methodology, not results.

<p>Vanelli M, Iovane B, Bernardini A, Chiari G, Errico MK, Gelmetti C, Corchia M, Ruggerini A, Volta E, Rossetti S; Students of the Post-Graduate School of Pediatrics, University of Parma. <a href="#">Breakfast habits of 1, 202 northern Italian children admitted to a summer sport school. Breakfast skipping is associated with overweight and obesity.</a> <i>Acta Biomed.</i> 2005 Sep; 76 (2): 79-85. PMID: 16350552</p>	<p>Study design is cross-sectional.</p>
<p>Veldhorst MA, Nieuwenhuizen AG, Hochstenbach-Waelen A, Westerterp KR, Engelen MP, Brummer RJ, Deutz NE, Westerterp-Plantenga MS. <a href="#">A breakfast with alpha-lactalbumin, gelatin, or gelatin plus TRP lowers energy intake at lunch compared with a breakfast with casein, soy, whey, or whey-GMP.</a> <i>Clin Nutr.</i> 2009 Apr; 28 (2): 147-155. Epub 2009 Jan 31. PMID: 19185957</p>	<p>Does not answer question; examined the effects of different types of protein on satiety and energy intake when consumed at a breakfast test meal.</p>
<p>Waga G, Mavoia H. <a href="#">Sociocultural factors influencing the food choices of 16- to 18-year-old indigenous Fijian females at school.</a> <i>Pac Health Dialog.</i> 2006 Sep; 13 (2): 57-64. PMID: 18181391</p>	<p>Does not answer question; examined the relationship between sociocultural factors and breakfast intake.</p>
<p>Wardle J, Griffith J, Johnson F, Rapoport L. <a href="#">Intentional weight control and food choice habits in a national representative sample of adults in the UK.</a> <i>Int J Obes Relat Metab Disord.</i> 2000 May; 24 (5): 534-540. PMID: 10849572</p>	<p>Did not include weight in analyses.</p>
<p>Williams BM, O'Neil CE, Keast DR, Cho S, Nicklas TA. <a href="#">Are breakfast consumption patterns associated with weight status and nutrient adequacy in African-American children?</a> <i>Public Health Nutr.</i> 2009 Apr; 12 (4): 489-496. Epub 2008 May 27. PMID: 18503723</p>	<p>Study design is cross-sectional.</p>
<p>Woodruff SJ, Hanning RM. <a href="#">Associations between family dinner frequency and specific food behaviors among grade six, seven, and eight students from Ontario and Nova Scotia.</a> <i>J Adolesc Health.</i> 2009 May; 44 (5): 431-436. Epub 2009 Jan 9. PMID: 19380089</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>
<p>Woodruff SJ, Hanning RM, Lambraki I, Storey KE, McCargar L. <a href="#">Healthy Eating Index-C is compromised among adolescents with body weight concerns, weight loss dieting and meal skipping.</a> <i>Body Image.</i> 2008 Dec; 5 (4): 404-408. Epub 2008 Jul 21. PMID: 18640883</p>	<p>Does not answer question; did not examine relationship between breakfast and weight.</p>

<p>Würbach A, Zellner K, Kromeyer-Hauschild K. <a href="#">Meal patterns among children and adolescents and their associations with weight status and parental characteristics.</a> <i>Public Health Nutr.</i> 2009 Aug; 12 (8): 1, 115-1, 121. Epub 2009 Feb 26. PMID: 19243677</p>	<p>Study design is cross-sectional.</p>
<p>Wyatt HR, Grunwald GK, Mosca CL, Klem ML, Wing RR, Hill JO. <a href="#">Long-term weight loss and breakfast in subjects in the National Weight Control Registry.</a> <i>Obes Res.</i> 2002 Feb; 10 (2): 78-82. PMID: 11836452</p>	<p>Study design is cross-sectional.</p>
<p>Yang RJ, Wang EK, Hsieh YS, Chen MY. <a href="#">Irregular breakfast eating and health status among adolescents in Taiwan.</a> <i>BMC Public Health.</i> 2006 Dec 7; 6: 295. PMID: 17150112</p>	<p>Study design is cross-sectional.</p>
<p>Zullig K, Ubbes VA, Pyle J, Valois RF. <a href="#">Self-reported weight perceptions, dieting behavior and breakfast eating among high school adolescents.</a> <i>J Sch Health.</i> 2006 Mar; 76 (3): 87-92. PMID: 16475983</p>	<p>Study design is cross-sectional.</p>